rate assumptions associated with funding the various levels of debt and all other assumptions and data were provided by others. The Receiver noticed that the two parties had reached an impasse: the County's primary concern was the level of revenue increases that would be required, while the creditors as a whole were focused on the amount of concessions they would need to make. In order to get the parties talking, more information was needed to present concrete solution alternatives. The updated O&M and capital improvement plans provided some of the concrete numbers needed as inputs for the possible solutions, but one missing piece was projected System revenues. Because the majority of System revenues are generated from volumetric rates, a usage and demand study was required to forecast the number of System customers and the expected usage in order to project future System revenues.[165] The Receiver engaged American Water to prepare this usage and demand study.

The O&M and capital improvement plans, together with projected System revenues from the demand and usage study, provided the inputs Citi needed to develop revenue requirements for various debt scenarios. The Receiver asked Citi to calculate total debt service costs (principal and interest payments, and debt coverage requirements), revenue requirements, and required revenue increase assuming a range of total debt levels were refinanced at estimated future market conditions. The range was intended to represent the range of possible debt levels the County would need to refinance following various potential levels of concessions by the creditor groups. The various debt levels the Receiver asked Citi to use ranged from the total current outstanding debt of approximately $3.158 billion, down to approximately $1.4 billion, the amount that would result in no significant rate increases, decreasing in approximately $200 million increments. Citi prepared a summary of its results, which is included in the Appendix at A-17.

The table below provides a simpler summary of the results of the various scenarios run by Citi:

Receiver or the County in respect of such matters.

[165] The usage and demand study is discussed in more detail in Section IV.B.1 *infra.*

Table 4 - Summary of Results of Citi Scenarios

Scenario	Revenue Increases[166]			Par Value of New Debt[167]	Available Net Proceeds[168]	Redemption Cost[169]	Funding Gap[170]
	2012	2013	2014				
1	3.0%	3.0%	3.0%	1,578,420	1,370,160	3,158,299	(1,788,138)
2	20.0%	3.0%	3.0%	1,600,144	1,406,132	3,158,299	(1,752,166)
3	20.0%	3.0%	3.0%	1,800,301	1,575,536	3,158,299	(1,582,763)
4	20.0%	3.6%	3.6%	2,001,836	1,747,501	3,158,299	(1,410,797)
5	20.0%	10.0%	10.0%	2,200,441	1,940,201	3,158,299	(1,218,098)
6	20.0%	18.7%	18.7%	2,401,043	2,137,513	3,158,299	(1,020,785)
7	23.7%	23.7%	23.7%	2,602,891	2,328,859	3,158,299	(829,440)
8	28.0%	28.0%	28.0%	2,801,430	2,514,686	3,158,299	(643,613)
9	32.2%	32.3%	32.3%	3,001,714	2,700,240	3,158,299	(458,058)
10	36.0%	36.3%	36.3%	3,201,036	2,884,126	3,158,299	(274,172)
11	42.1%	42.1%	42.1%	3,499,031	3,158,326	3,158,299	28

The results of the Citi scenarios showed that, due in part to market debt coverage requirements[171], almost any scenario would require a significant (20% or more) increase the first year, and the majority of the refinancing solutions would also require multiple year double-digit revenue increases in the following years.[172] The Citi scenarios also showed that refinancing the entire approximately $3.158 billion in outstanding debt would require multiple significant (more than 40%) annual revenue increases.

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[166] All scenarios assume 3.0% rate increases annually from 2015 onwards for the full term of any newly-issued bonds.

[167] All dollar figures in 1,000s. The Par Value of New Debt represents the amount of new debt that will yield the Available Net Proceeds.

[168] The difference between the Par Value of New Debt and the Available Net Proceeds represent total issuance costs for each scenario.

[169] Redemption Cost is the total amount of debt currently outstanding.

[170] The Funding Gap is the difference between the amount of debt currently outstanding and the Available Net Proceeds resulting from the refinancing under each scenario. The Funding Gap represents the total amount of creditor concessions for each scenario, assuming that the County pays the issuance costs.

[171] Debt coverage requirement refers to the amount of cash the System will be required to maintain as security for repayment of the bonds.

[172] As discussed in more detail in Sections IV and V *infra*, because the Receiver cannot increase non-rate revenues, revenue increases must come from rates. Rate increases must be slightly larger than the stated revenue increase to achieve the desired result. For example, a 20% overall revenue increase is the equivalent of a 21.3% rate increase.

Although the Citi models had the intended effect of sparking negotiations, the negotiations ultimately did not make substantial progress towards a solution, due in part to additional factors which complicate the analysis. Some of those factors include:

- resolution of on-going litigation;
- market risk based on interest rate fluctuations and the marketability of high yield bonds;
- development and passage of legislation necessary to create an entity (independent public corporation) to refinance or restructure the negotiated debt level and possibly enhance sewer revenue; and
- the parties' inability to agree on a suitable structure for a settlement (the County has to date insisted on a restructuring of the debt while the various creditors are united in their insistence that the debt be refinanced).

The Receiver also worked to facilitate and support various pieces of legislation that would probably be necessary to refinance the sewer debt and remove barriers to the future efficient operation of the System.[173] The critical legislation involves creation of an Independent Public Corporation ("IPC") that would ultimately hold the System's assets, operate the System, and be obligated to pay the refinanced debt. The County has developed draft legislation for the IPC but it has not been presented to the legislature. The IPC would have independent board and governance documents to ensure its proper operation and funding. Discussions with legislators, politicians and community leaders have also focused on methods to mitigate future rate increases through mandating connection to the sewer system for homes in a reasonable proximity and the implementation of a clean water fee for residents across Jefferson County.

Unfortunately, it appears at this point that the County and its creditors agree that any negotiated solution, much less implementation of that solution, is still unlikely in the near future. The Receiver encourages the County, its various creditors groups, and all stakeholders to continue these negotiations and remains available to assist the parties in these negotiations in any manner they deem helpful.

In the final analysis, it is clear that although many things have changed since the Receiver's involvement as Special Master, many operational efficiencies have been implemented, and many more are planned, the most fundamental problem identified in the Special Masters Report remains – the System has insufficient sources and levels of revenue to meet its revenue requirements. This funding deficit cannot be corrected through cost cutting alone; System revenues must also increase. Currently, the only sources of additional revenue available to the Receiver are fees and rate increases. The amount and timing of inevitable future rate increases is dependent, in large part, on whether the parties can reach a negotiated solution to the current sewer debt crisis, and if so, what the terms of that negotiated solution will be.

As discussed in more detail in the following sections of this Report, the Receiver does not have the luxury of waiting until the parties reach a negotiated solution to take further action.

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[173] A more detailed discussion of these barriers and potential legislative solutions is contained in Section VIII *infra,*

Despite the uncertainty surrounding many financial aspects of the System, the Receiver's reviews and analyses conducted since appointment confirm the need to immediately begin implementing a series of future rate increases to bring System revenues up to required levels. The following sections of this report explain the Receiver's analysis of the System's existing and projected future revenues and expenses, and outline the Receiver's plans going forward.

IV. The Receiver's Interim Findings.

In providing adequate wastewater service to its customers, a utility must receive sufficient total revenue to ensure proper operation and maintenance (O&M), development and perpetuation of the system, and preservation of the utility's financial integrity. The basic components in determining the overall revenue requirements of a utility include (1) O&M expenses, (2) debt-service payments and specified reserves, and (3) the cost of capital expenditures for routine replacement of existing facilities, normal annual extensions and improvements and major capital replacement and improvements. The Receiver has completed an exhaustive review of these components with regard to the System, and formulated a plan for actions necessary to meet the objective of establishing the System as a stable and efficient utility operation.

A. Past Rate Increases Were Insufficient to Adequately Fund the System.

Any business must generate sufficient revenues to meet its operational, capital, and debt service obligations. It is obvious the System does not currently generate sufficient revenues to meet its operational, maintenance, and appropriate debt service costs (nor has it for almost all of its 110 years of existence). Almost all of the current System revenues are generated from user rates and charges. The non-rate revenue sources, which include the annual sewer ad valorem tax, interest earnings, and miscellaneous permit fees, comprise only a small percentage of overall System revenues. Sewer user charges, the principal source of System revenues, have not been increased since 2008. There is no question that 2008 rate levels are insufficient to fund the System's costs for 2011 and beyond.

Prior to 2008, however, the County had already fallen behind and failed to implement sufficient rate increases to fully fund the financial needs of the System. As noted *supra* at Section II.E, the County's own financial consultants repeatedly made recommendations as to the minimum levels of rate increases necessary to meet the System's obligations. The County completely ignored or failed to fully implement those rate increases. Those decisions (and the financing decisions that preceded them) may have brought continued, short-term political popularity for the officials who made them (many of whom were convicted of crimes and went to jail), but they came at a huge price for the County, its ratepayers and, in fact, all its residents. Moreover, the supposed goal of those decisions – shielding residents from rate increases – was not accomplished. At best, rate increases were deferred. At worst, rate increases will now be larger than otherwise would have been necessary due to years of inattention to the System's maintenance, the County's sewer debt, years of contentious litigation, the appointment of a receiver, and the disintegration of the relationship between the County and its various creditors groups and the capital markets.

B. The System's Revenues Are Declining.

Most of the System revenues are generated from the user charges customers pay. The System's sewer charges are primarily volumetric: customers pay a set amount based on the volume of water the customer uses.[174] Therefore, the total amount of revenue generated from user charges varies greatly depending on the amount of water usage.

In order to estimate the System revenues that will be generated under the existing rates, it was necessary to project anticipated customer numbers and usage, which is generally referred to as a demand or usage study. The Receiver engaged American Water to complete a customer and demand study for the System (the "Demand Study"). A copy of the American Water Demand Study report is included in the Appendix at A-18.

1. The Demand Study Results: Both Customer Numbers and Average Usage are Declining, Resulting in Declining Rate Revenues.

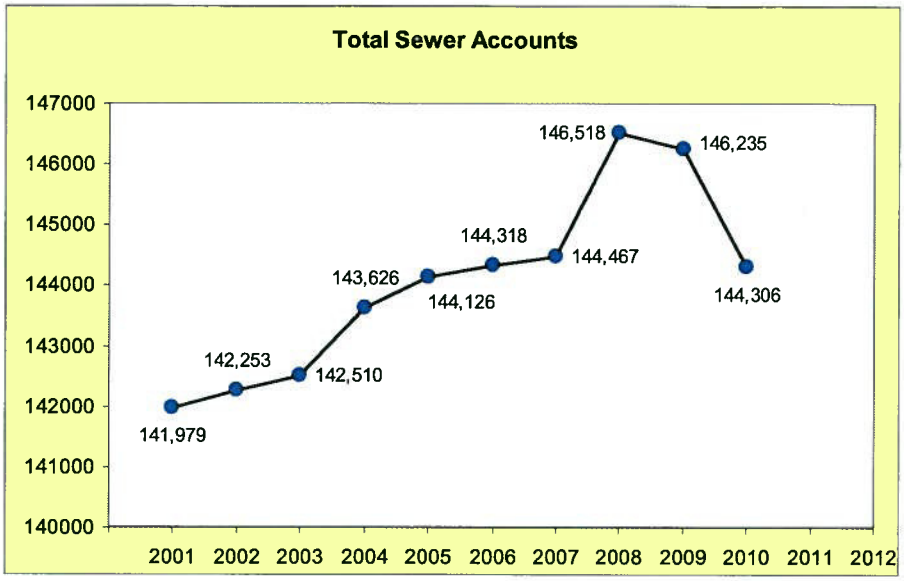
The purpose of the Demand Study was to forecast the number of customers to be served by the System, and their water use, over a 30-year planning period; in other words, the Demand Study is used to forecast future needs and revenues of the System. The reason for forecasting water use is that sewer customers are billed on the basis of their water usage, so water use by sewer customers rather than sewer demand is forecast.

National trends in per-account consumption and Jefferson County historic trends in water consumption were used as the basis for predicting future water consumption per System customer. Final projections of the number of customer accounts were based on the Regional Planning Commission of Greater Birmingham report on "Population, Housing & Employment Projections 2005 – 2035."

As shown in the graph below, from 2001 to 2010, the number of System sewer accounts increased from 141,979 in fiscal year 2001 to a peak of 146,235 accounts in fiscal year 2009, followed by a decline to 144,306 accounts for fiscal year 2010.[175]

[174] The volume of water usage is measured in units of 100 cubic feet, or Ccf: "C" stands for *centum*, or hundred. For water, one Ccf is the equivalent of approximately 748 gallons. Sewer bills for residential customers are calculated on 85% of total metered water usage; non-residential customers are billed using 100% of metered water usage.
[175] Demand Study Report, Table 1.

Figure 3 - Total Sewer Accounts 2001-2010

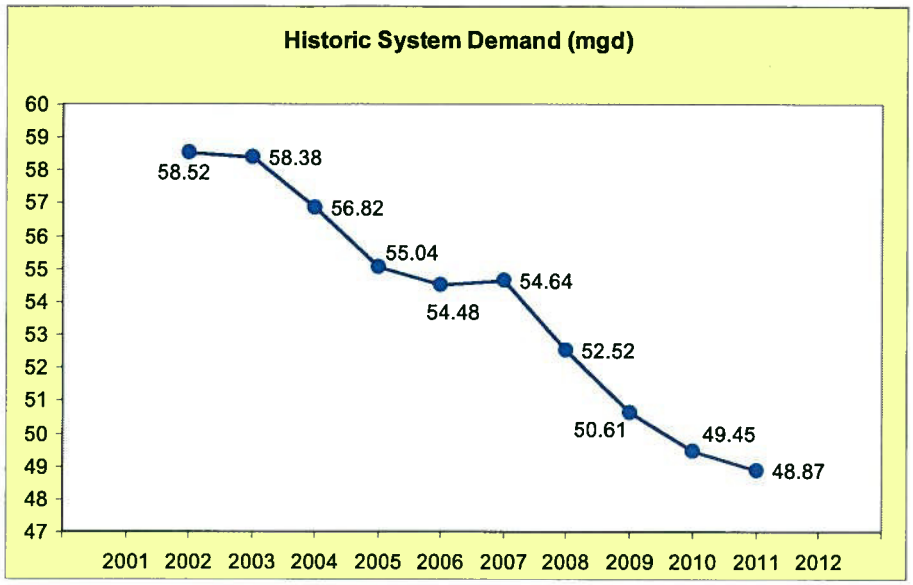


The recent drop in sewer accounts is primarily due to declining residential accounts, which is consistent with population and employment trends reported by the Regional Planning Commission of Greater Birmingham that indicate population in the core of the System's service area is decreasing due primarily to migration to areas outside the service area.[176]

As shown in the chart below, during the same 2001 to 2010 time period, usage within the System also declined. Total System demand dropped from 58.52 million gallons per day (mgd) in 2001 to 48.87 mgd in 2010, a decrease of 16.4%. This decrease was the result of the decline in both residential and non-residential usage per account.[177]

[176] *Id.* at 2.
[177] *Id.*

Figure 4 - Historic System Demand

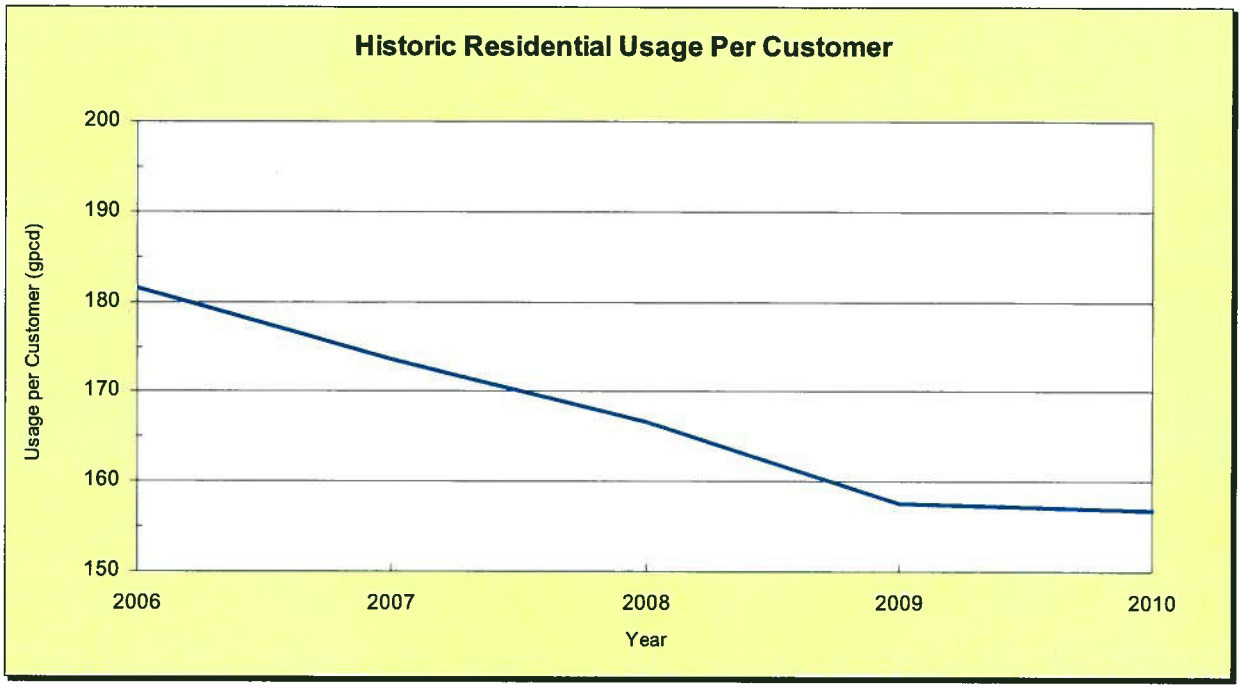


This decline in usage per customer is consistent with national trends. Residential customer demand fell more rapidly than the number of customers, indicating a decline in the usage per customer. From 2006 to 2010, usage per customer fell from 181 gallons per account per day (gpad) to 157 gpad, a total drop of 13.6% or an annual average drop of 3.4%. Factors that can influence water use per customer include population per housing unit, installation of water conserving devices, plumbing codes requiring water saving devices, size of lots, outdoor water use practices, water rates and water rate structures. The historical rate of decline experienced in the System is more rapid than that typically experienced for other systems in other parts of the country.

As shown on the chart below, from 2006 to 2010, average residential usage also declined from 181 gallons per day in 2006 to 156 gallons per day in 2010, a decline of 3.4%.[178]

[178] *Id.* at 15-16.

Figure 5 - Usage Per Account 2006-2010

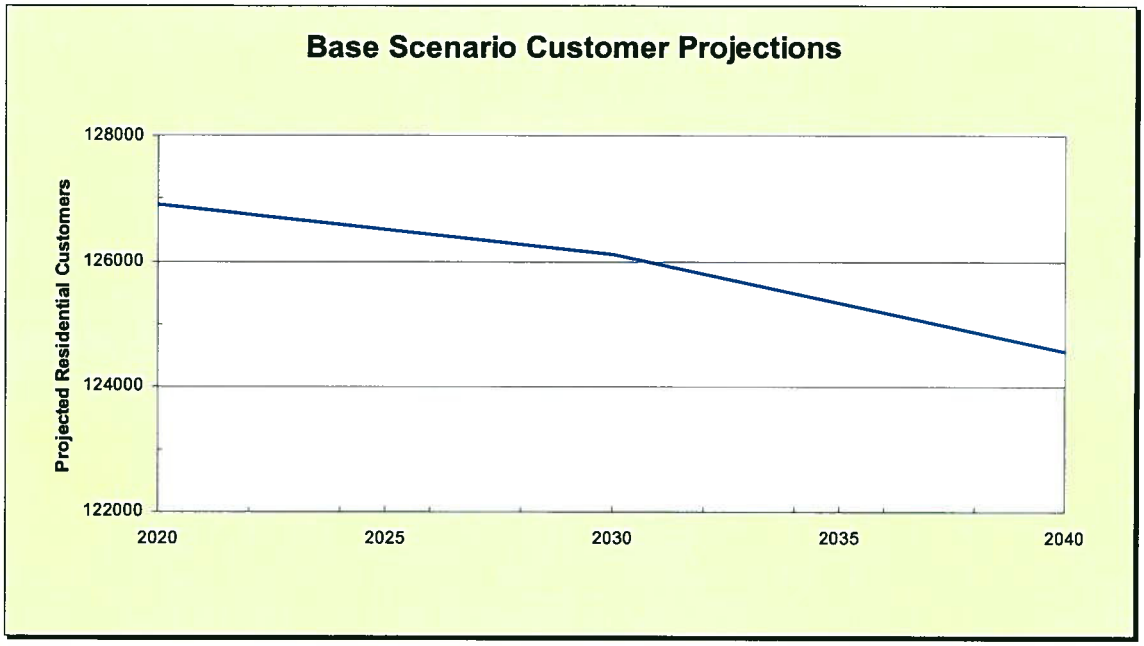


To forecast future System demand, projections were developed for three scenarios of population growth and water usage. The scenarios are identified as "Low," "Base" and "High," and reflect the likely potential ranges of growth based on historic trends and planning forecast data.

The base growth scenario forecasts that the number of System residential customers will decrease by 1,036 accounts to 126,890 by 2020 and by 3,359 accounts to 124,567 by 2040. This decline in sewer accounts is demonstrated in the graph below:[179]

[179] Demand Study at 19.

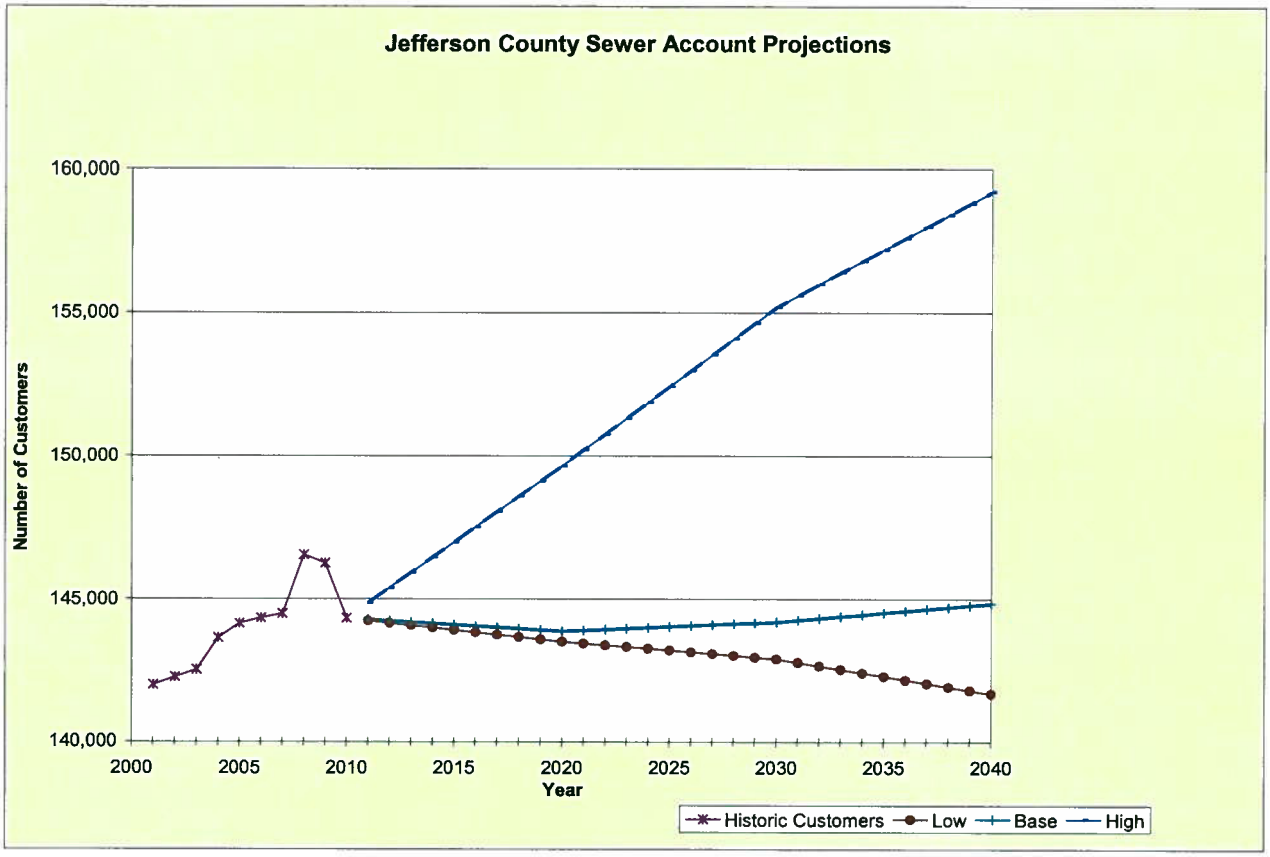
Figure 6 - Base Scenario Residential Customer Projections



A key factor underlying the growth assumptions is that existing homes, and future new housing near sewer lines, are not being required to connect to the sewer system. If legislation is enacted requiring mandatory connection for existing homes and new construction located near existing sewer lines, an additional 7,500 residential customers could be added, and the decline in customers projected in the base case would reverse, as shown in the graph below comparing the low, base, and high scenarios:[180]

[180] *Id.* at 19-20, Exhibit 5.

Figure 7 - Sewer Account Projections



The base residential usage per account was forecast assuming future per capita use will decline at a linear rate of 1.28% per year. This decline in usage is based on the trend American Water has experienced in water systems it has owned or operated over the past ten years. This trend was used because it represents a broad cross-section of customers including water systems that serve areas similar to Jefferson County, and because it is not reasonable to expect the steeper trend experienced within Jefferson County to continue. In addition, American Water is an investor-owned, regulated public utility with water rates that must be adjusted periodically to reflect the full cost of service. Therefore, American Water's experience accounts for effects of elasticity due to rate increases in addition to other national water use trends. Non-residential usage per account was forecast using similar methodology.[181]

In summary, the Demand Study projects a declining trend in per account water demand and a decline in sewer customers, which should result in a base average daily demand forecast for 2040 of approximately 39.6 million gallons per day ("mgd") compared to the 2010 average day demand of 48.87 mgd, as demonstrated in the graph below:[182]

[181] *Id.* at 22.
[182] *Id.* at Exhibit 6.